

Running head: TRANSITIONAL DOCTOR OF PHYSICAL THERAPY

An Analysis of Transitional Doctor of Physical Therapy Degrees for the Department of Defense

J. M. Stang

U. S. Army - Baylor University Graduate Program in Health Care Administration

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Abstract

The purpose of this study was to survey DoD physical therapists for their opinions of tDPT programs and compare the costs of several courses of action (COAs). The majority of DoD therapists are credentialed at the graduate level. However, the American Physical Therapy Association vision states that by 2020 physical therapy will be provided by therapists who are doctors of physical therapy. A survey of DoD therapists was conducted to describe the attitudes, opinions, and resources available within the population. Descriptive statistics were computed for the sample. The results were used to create three COAs that were analyzed for cost and feasibility. Two-hundred and two DoD surveys were returned for a response rate of 49%. Sixty four percent of respondents were considering enrolling in a tDPT program and were willing to pay an average of \$7,398. Time and cost were the two most frequent factors involved in selecting a tDPT program. Several options were identified as cost effective. This study represents a critical first step in the DoD to describe its physical therapist population. It was used to develop and assess various COAs designed to meet the APTA's vision and sustain the DoD's competitive advantage.

Table of Contents

1. Introduction	7
a. Conditions that Prompted the Study	7
b. Statement of the Problem or Question	
c. Purpose	8
2. Literature Review	9
3. Methods	14
4. Results	15
5. Discussion	22
6. Conclusions and Recommendations	29
7. References	31
8. Appendices	34

List of Tables

Table 1. Reasons cited for necessity of militarizing dietitians and physical therapists	10
Table 2. Descriptive statistics	16
Table 3. Opinions of DPT degrees	17
Table 4. Considerations in participation of tDPT programs	18
Table 5. Programs preferred by respondents	19
Table 6. Resources available for distance learning	19
Table 7. Worst case scenario	21
Table 8. Best case scenario	22
Table 9. Most likely case scenario	22

List of Figures

Figure 1. Geographical plot of DoD physical therapists in the United States	20
Figure 2. Geographical plot of DoD physical therapists in foreign locations	21

An Analysis of Transitional Doctor of Physical Therapy Degrees for the Department of Defense

Introduction

a. Conditions that prompted the study. The profession of physical therapy has undergone significant change in its education programs. While the Department of Defense (DoD) practically invented the profession, and was well ahead of its civilian contemporaries during the last half century, it is at risk of losing its competitive advantage (Office of the Surgeon General, 1998). The rate of change has increased in the past 15 years. The most recent change has been the development of doctoral degrees for physical therapists. Advanced technology, direct access to patients, evidence based practice, privileging, and quality assurance are often cited as the justification for doctoral level education for physical therapists (Office of the Surgeon General, 1998) (Curtis, 2002) (Scott, 2002) (Cox, 1988) (Ellis, 1997).

Doctoral programs fall into three broad categories. They may be entry-level Doctor of Physical Therapy (DPT), advanced clinical fellowship Doctor of Science (DScPT), or transitional Doctor of Physical Therapy (tDPT). Such programs offer content in areas that have been significantly augmented over the past 5-10 years and are designed to achieve the American Physical Therapy Association's (APTA) vision. The APTA's vision is (American Physical Therapy Association, 2003):

Physical therapy, by 2020, will be provided by physical therapists who are doctors of physical therapy and who may be board-certified specialists. Consumers will have direct access to physical therapists in all environments for patient/client management, prevention, and wellness services. Physical therapists will be practitioners of choice in clients' health networks and will hold all privileges of autonomous practice. The idea is to augment their

knowledge and skills in areas that, together with any specialized knowledge and experience, would position them more strongly as a provider in a health care system that is often characterized as uncertain and competitive.

The DoD already has two DScPT programs in place at Brooke Army Medical Center, Ft. Sam Houston, TX and the U. S. Military Academy at West Point, NY. These two programs accept a limited number (four each, every 24 months) of highly qualified therapists that already have a Master of Physical Therapy (MPT) degree. The DoD will matriculate its first class of entry-level DPT students into the U. S. Army – Baylor University Graduate Program in Physical Therapy in December 2003. However, the DoD does not yet have a plan or program to convert its personnel with MPT degrees to tDPT degrees.

b. Statement of the Problem or Question. DoD physical therapists have been at the forefront of the physical therapy profession since its earliest origins. However, the profession and its education system are at a crossroads (American Physical Therapy Association, 2003) and the DoD is at risk of being left behind. No current data exist that describe the interest of DoD physical therapists in programs designed to transition them from MPT degrees to tDPT degrees. However, anecdotal evidence suggests that interest in such programs is high and examination of potential courses of action must be undertaken immediately to ensure that DoD physical therapy programs and physical therapists retain a competitive advantage.

c. Purpose (Variables/Working Hypothesis). The purpose of this study is to survey DoD physical therapists for their opinions of tDPT programs and compare the costs of several potential courses of action. The Army, Navy, and Air Force get their therapists from multiple sources. These include, the U.S. Army – Baylor University Graduate Program in Physical Therapy, direct commissioning programs, and Reserve Officer Training Programs. These

therapists are all prepared at the graduate level. The DoD's approach to tDPT programs will have to be capable of transitioning physical therapy degrees from all sources.

Literature Review

The rehabilitation professions gained prominence as a result of World War I, when dietitians, physical therapists, and occupational therapists served as civilian employees of the U.S. Army (Gritzer, 1985). MG Norman T. Kirk, the Surgeon General of the Army, recognized the value of these providers and he championed the cause of providing them regular military commissions. BG Roger Brooke also supported full military status of these providers. However, the transformation did not occur rapidly and required a decades-long softening period (Anderson, Lee, & McDaniel, 1986).

With the advent of World War II, the 77th Congress passed Public Law 828, authorizing dietitians and physical therapists a military status with relative rank in the Medical Department for the duration of the war and six months thereafter (Mills, 2001). Building on this, the Surgeon General stated that it was necessary for these specialties to be militarized in the peacetime Army for the reasons outlined in Table 1 (Anderson, Lee, & McDaniel, 1986). On April 16, 1947, President Truman signed Public Law 80-36, the Army-Navy Nurses Act of 1947, establishing the Women's Army Medical Specialist Corps (AMSC) in the Regular Army (DCMilitary, 2003).

Education and training of military and civilian physical therapists have been evolving since the first Army physical therapist, Ms. Mary McMillan, reported to the first hospital based physical therapy clinic in the United States at Walter Reed General Hospital in 1918. At that time, there were very few people in the United States who had education or experience in physical therapy. Therefore, the Surgeon General invited several prominent educators to a conference that resulted in an appeal to physical education schools to cooperate in establishing

short emergency physical therapy training programs. Six physical education and gymnastic schools answered the call. Numerous shortcomings of this curriculum became evident and efforts were undertaken to make physical therapy training more comprehensive. The Army did not establish its own program until 1922 at Walter Reed General Hospital (Anderson, Lee, & McDaniel, 1986).

Table 1.

Reasons cited for necessity of militarizing dietitians and physical therapists in peacetime

Number	Synopsis
1	As officers during the war they were a credit to the Medical Department and Army. Civilian and other governmental agencies were recruiting qualified personnel in these categories, and if the Army were to train their services, it was essential that they be offered commissions in the Regular Army.
2	These professional personnel were indispensable to the efficient operation of Army hospitals and their militarization would enable the Army to utilize their services when, where, and as needed both overseas and in the United States.
3	The cost of militarizing these specialists in the peacetime Army would be not greater than the cost of their employment as civilians.
4	It would be demoralizing to these groups if their commissioned status were not continued in the postwar Army.
5	The specialties were interrelated and their militarization would foster teamwork in the care of patients in Army hospitals and insure permanency and continuity in such care.

World War I and the polio epidemic of the 1940s and 1950s created a large demand for rehabilitation services. Physical therapy began a rapid expansion, became more organized, and centered on formal education during this period. Upon leaving military service, Ms. McMillan became the founding president of the first professional organization in 1921; called the American Women's Physical Therapeutic Association. It later admitted men in the late 1930s and became the American Physiotherapy Association. By the late 1940s the association changed its name again to the American Physical Therapy Association (APTA).

Education programs swelled with the increased demand and professional organization from 16 in the late 1920s, to 39 in the 1950s, to 52 in the 1960s (American Physical Therapy Association, 2003). Physical therapists initially completed and practiced under a certificate, modeled after teacher education programs. Ms. McMillan, however, urged her colleagues to establish high professional standards and locate physical therapy education programs in colleges and universities (May, 1996). In 1927, the American Women's Physical Therapeutic Association established formal education and practice standards. However, there was no way of enforcing these standards and certificate programs continued to represent the majority of programs for another three decades.

Ms. McMillan's desire for university based physical therapy education became a legislated reality when the Allied Health Professions Training Act was passed in 1953. It was the first law to identify the baccalaureate degree as the minimum degree for entry-level physical therapist education. By 1956, baccalaureate programs represented the majority of education programs (Moffat, 1996). The Army retained its competitive advantage throughout this change and had clearly anticipated additional changes since 95% of AMSC personnel were college graduates and 15% had Masters degrees in 1959 (Anderson, Lee, & McDaniel, 1986).

The evolution of physical therapy education did not end with the Allied Health Professions Training Act. In 1979 the APTA issued what became known as the, "Rule of 1990." It was the decision of the APTA that education programs should lead to a post baccalaureate degree by 1990. This created significant apprehension within the profession and there was widespread resistance to the rule. Schools anticipated higher costs and physical therapists educated at the baccalaureate level saw the new requirement as a threat to their livelihood. Only 64% of accredited programs and 80% of developing programs were credentialed at the post

baccalaureate degree level by 1996 (May, 1996). It was not until January 1, 2002 that the Commission on Accreditation in Physical Therapy Education (CAPTE) no longer accredited baccalaureate professional programs (American Physical Therapy Association, 2003).

Once again, the Army's physical therapy program was already well ahead of its civilian counterparts. It had joined with Baylor University in 1971 to establish the U. S. Army – Baylor University Graduate Program in Physical Therapy (Army Medical Department Center and School, 1997). This program is internationally renowned and its consistently high rankings in U. S. News and World Report reinforce its value to the service and the nation. Clearly, DoD beneficiaries have been receiving care from many of the best educated PTs in America. Most, however, have limited didactic preparation in evidence based medicine, pharmacology, laboratory testing, and imaging. In a recent evidence based practice survey, respondents agreed that the use of evidence in practice was necessary, that the literature was helpful in their practices, and that quality of patient care was better when evidence was used (Jette et al., 2003). Evidence based medicine, diagnosis, pharmacology, laboratory testing, and imaging are well represented in doctoral programs designed to meet the APTA's vision.

Unlike the move to master's programs, there has been a rapid expansion of schools offering doctoral degrees. As of October, 2003 there were 61 accredited entry-level DPT programs and 25 tDPT programs in the U.S. (American Physical Therapy Association, 2003). The U.S. Army – Baylor University Graduate Program in Physical Therapy will not matriculate its first DPT class until December 2003, which means that the DoD will not have significant numbers of doctoral level therapists for a very long time. For example, the Army will not achieve a 50% mix until approximately 2016 if it does not endorse a tDPT program. Therefore, the DoD is at risk of falling behind its civilian counterparts.

Though the development of doctoral programs has been rapid, opinions of their potential advantages and disadvantages have been debated in the literature. May (1996) raised several questions in regard to the DPT including, will DPT practitioners demand higher salaries, is there support that practitioners with DPTs practice differently than those with MPTs, how it will look to cost conscious administrators, and how will it be perceived by the public? Fearon (1993) argued that, “the entry-level doctorate may only produce a very knowledgeable individual who is really only capable of practicing at the entry level bachelor’s degree therapist.” Scott (1997) illuminates many of the legal issues surrounding the DPT, direct access, insurance companies, and managed care organizations. However, Fabrizio (1997) was the most controversial. He asserted that the PT profession is suffering from an identity crisis and that doctoral programs only serve to complicate the issue without necessarily being comparable to requirements for physicians and doctorate academicians.

The physicians and chiropractors have weighed in on the issue as well. The American Medical Association has published at least five policy statements relating to the DPT and opposing direct access (American Medical Association, 2002). Cox (1988) stated that the reason that Doctors of Chiropractic are portal-of-entry practitioners is that they are trained in diagnosis, and he opposed direct access at that time. However, he also stated that, “the request for direct access would be more reasonable if PTs received training on diagnosis.”

Soderberg (1993) recognized and addressed many of these issues. He recommended a criterion based, organized approach to their resolution. He asserted that as the profession strives for autonomy and professional status, the first professional degree is likely to be the DPT. Numerous studies were conducted in response to the Fabrizio study (Knudsen, 1997, Donato, 1997, Hoiowka, 1997, and Schneider, 1997). The subsequent research refutes many of Fabrizio’s

statements and favorably compare the DPT and direct access to other limited medical professionals such as dentists, podiatrists, optometrists, and clinical psychologists.

Methods

A needs assessment tool (Appendix A) was designed to determine several important pieces of information. First, it was used to describe the inventory of commissioned physical therapists within the DoD and their opinions of the tDPT. Second, it helped to determine how many therapists are interested in tDPT programs and at what cost. Finally, it was used in developing tDPT COAs for additional analysis.

The survey was developed using Fowler's guidance (2002). It was validated November 31, 2003 and distributed electronically through the career counselors of each branch in December, 2003. Descriptive statistics were calculated for demographic items, opinions of the tDPT, and available academic resources. Graphs were generated by branch of service to most clearly convey differences between each.

The number and location of each service's military physical therapists, as well as several tDPT schools identified as potentially of interest from the survey, were plotted on maps. Physical therapists in full time training programs were excluded from this analysis. The plots were used to determine if clusters of therapists existed near tDPT programs.

The results of the survey and geographical plot were used to develop and analyze three COAs. These included grandfathering recent graduates of the U.S. Army – Baylor University Graduate Program in Physical Therapy, using the DoD's purchasing power to negotiate bulk or tier pricing, or building a tDPT program capable of meeting the DoD's needs. The decision had to be based on the best cost and value information available. However, identifying all costs with great certainty for each option was difficult. Therefore, worst case scenarios, best case scenarios,

and most likely case scenarios were developed. Costs for the Physical Therapist Evaluation Tool (PTET), Graduate Record Examination (GRE), tuition, travel, housing, Internet, application fees, graduation fees, student fees, technology fees, and software were used for the first two COAs. Other factors such as reputation and faculty were also discussed. The cost of personnel, equipment, technology, and facilities were used for the third COA.

Results

The needs assessment tool was e-mailed to the DoD population of 173 Army, 153 Air Force, and 90 Navy military physical therapists. One hundred fifteen (67%) Army, 55 (36%) Air Force, and 32 (36%) Navy physical therapists responded to the needs assessment tool. Of the 202 total respondents 57% were from the Army, 27% were from the Air Force, and 16% were from the Navy. All needs assessment tools were used in compiling data, although one was incomplete and another 54 contained answers to all questions even if they were not considering pursuing a tDPT. Question 18 of the needs assessment tool (Appendix A) asked respondents to skip to question 22 if they were not considering enrolling in a tDPT program.

Table 2 summarizes the demographic data. The respondents represented all active duty branches of the Department of Defense practicing in locations throughout the world. There were 126 male (62%) and 76 female (38%) respondents to this study. The mean age was 35.1 years with a S.D. of ± 6.2 years. The majority of respondents worked in small facilities (46%) or large facilities (38%). This question asked respondents to check all responses that applied, so the total sums to greater than 202. The mean time of federal service was 9.9 years with a S.D. ± 5.9 years, which corresponds well to the pay grade mode of O3. Most (56%) had at least one specialty certification and 13% had a terminal degree. Data are graphically represented in Appendix B.

Table 2.
Descriptive statistics

	Overall		Army		Air Force		Navy	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Surveys Returned	202.0	100	115.0	57	55.0	27	32.0	16
Age								
Mean	35.1		34.3		36.2		36.3	
Median	34.0		33.0		35.0		36.0	
Mode	31.0		32.0		33.0		33.0	
Upper Range	24.0		53.0		50.0		49.0	
Lower Range	24.0		24.0		25.0		29.0	
S.D.	6.2		6.4		6.3		4.7	
Gender								
Female	76.0	38	47.0	41	17.0	31	12.0	38
Male	126.0	62	68.0	59	38.0	69	20.0	62
Years of Service								
Mean	9.9		10.2		9.1		10.5	
Median	9.0		9.0		8.0		9.0	
Mode	5.0		5.0		5.0		9.0	
Upper Range	30.0		30.0		21.0		23.0	
Lower Range	1.0		2.0		1.0		3.0	
S.D.	5.9		6.1		5.6		5.3	
Type of Facility								
Large Facility	77.0	38	43.0	37	25.0	45	9.0	28
Medium Facility	1.0	0	1.0	1	0.0	0	0.0	0
Small Facility	97.0	48	54.0	47	28.0	51	15.0	47
Deployable Unit	6.0	3	6.0	5	0.0	0	0.0	0
Aboard Ship	6.0	3	0.0	0	0.0	0	6.0	19
Admin. Facility	5.0	2	5.0	4	0.0	0	0.0	0
Ed. Facility	12.0	6	8.0	7	2.0	4	2.0	6
Research Facility	2.0	1	2.0	2	0.0	0	0.0	0
Specialty								
None	88.0	44	45.0	39	28.0	51	15.0	47
Yes	114.0	56	70.0	61	27.0	49	17.0	53
> one	21.0	10	8.0	4	5.0	9	8.0	25
Terminal Degree	26.0	12	15.0	7	8.0	4	3.0	1

As summarized in Table 3, 82% of respondents were proponents or strong proponents of the APTA's vision. Sixty nine percent felt that the tDPT would improve the profession, 64% felt that it would lead to parity with other limited medical professionals, 57% felt that it would

Table 3.
Opinions of DPT degrees

	Overall		Army		Air Force		Navy	
APTA Vision	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Strong Proponent	95	47	63	55	22	40	10	31
Proponent	70	35	32	28	24	44	14	44
Neutral	23	11	11	10	5	9	7	22
Against	11	5	6	5	4	7	1	3
Strong Against	3	1	3	2	0	0	0	0
Improve Profession								
Yes	140	69	85	74	42	76	13	41
No	35	17	18	16	7	13	10	31
Don't Know	27	13	12	10	6	11	9	28
Direct Access Parity								
Yes	129	64	76	66	38	69	15	47
No	37	18	18	16	9	16	10	31
Don't Know	36	18	21	18	8	15	7	22
Enhance Employment*								
Yes	116	57	70	61	30	55	16	50
No	52	26	22	19	17	31	13	41
Don't Know	33	16	22*	19	8	14	3	9
Enhance Pay								
Yes	57	28	39	34	13	23	5	16
No	97	48	46	40	29	54	22	68
Don't Know	48	24	30	26	13	23	5	16
Patient Perspective								
Add Value	107	53	62	54	31	56	14	44
Confuse	32	16	15	13	8	15	9	28
Both	51	25	29	25	14	26	8	25
Neither	12	6	9	8	2	3	1	3

* Indicates missing data point

enhance their employment opportunities, 48% did not feel that the tDPT would enhance their pay, and 53% felt that it would add value for physical therapy patients.

The majority (64%) of respondents have considered or are considering enrolling in a tDPT program (Table 4). Only 5% are currently enrolled, though 11% of Air Force respondents are currently enrolled. Price was most often cited (58%) as a factor in considering which program to attend. On average respondents were willing to pay \$7,398; the range was from low of \$0 to a high of \$30,000. Reputation was the least cited (44%) factor influencing the decision. Table 5 lists the programs respondents preferred to attend. Table 6 provides distance learning assets available to respondents at their current duty assignment. The overwhelming majority of respondents have e-mail (99%) and Internet access (98%). The percentages drop dramatically for more advanced and resource intensive technologies such as video conferencing (64%) and video teletraining (16%).

Table 4.
Considerations in participation of tDPT programs

	Overall		Army		Air Force		Navy	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Considering tDPT	130	64	71	62	37	67	22	69
Currently Enrolled	11	5	3	3	6	11	2	6
Willing to Fund	84	42	54	47	20	36	10	31
Factors								
Price	117	58	69	60	29	53	19	59
Time	113	56	64	56	31	56	18	56
Location	103	51	59	51	28	51	16	50
Reputation	88	44	50	44	23	42	15	47

Table 5.
Programs preferred by respondents

	Frequency	Curriculum
Baylor University	9	
Boston University	4	Distance only
Temple University	2	Distance only
MGH Institute of Health Professions	2	Distance only
University of the Pacific	2	Comb. onsite/distance
University of St. Augustine for Health Sciences	2	Comb. onsite/distance
Creighton University	2	Comb. onsite/distance
Rocky Mountain University of Health Professions	2	Comb. onsite/distance
University of Miami	1	Distance only
Northern Arizona University	1	Onsite only
Arizona School of Health	1	Distance only
University of Indianapolis	1	Comb. onsite/distance

Table 6.
Resources available for distance learning

	Overall		Army		Air Force	Navy		
E-mail Capability	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Yes	200	99	115	100	54	98	31	97
No	2	1	0	0	1	2	1	3
Internet Access								
Yes	197	98	113	98	53	96	31	97
No	5	2	2	2	2	4	1	3
VTC Capability								
Yes	130	64	91	79	25	46	14	44
No	72	36	24	21	30	54	18	56
VTT Capability								
Yes	33	16	25	22	4	7	4	13
No	169	84	90	78	51	93	28	87

School locations, DoD physical therapist assignment locations, and the number of personnel assigned at each were plotted on maps to provide a picture of their geographical distribution and better understand the needs of each service (Figure 1 and Figure 2). The plots do not include students in graduate or doctoral level programs. Clusters are seen on the east coast,

northwest coast, southwest coast, and south central United States. Additional clusters occurred in Europe and Asia. Fully 25% of all DoD physical therapists are assigned along the eastern seaboard. Another 29% are dispersed throughout a large area in the south central states. Only 11% are assigned in far western states. Finally, 11% serve in foreign locations; however this increases to 15% if the remote locations of Alaska and Hawaii are included.

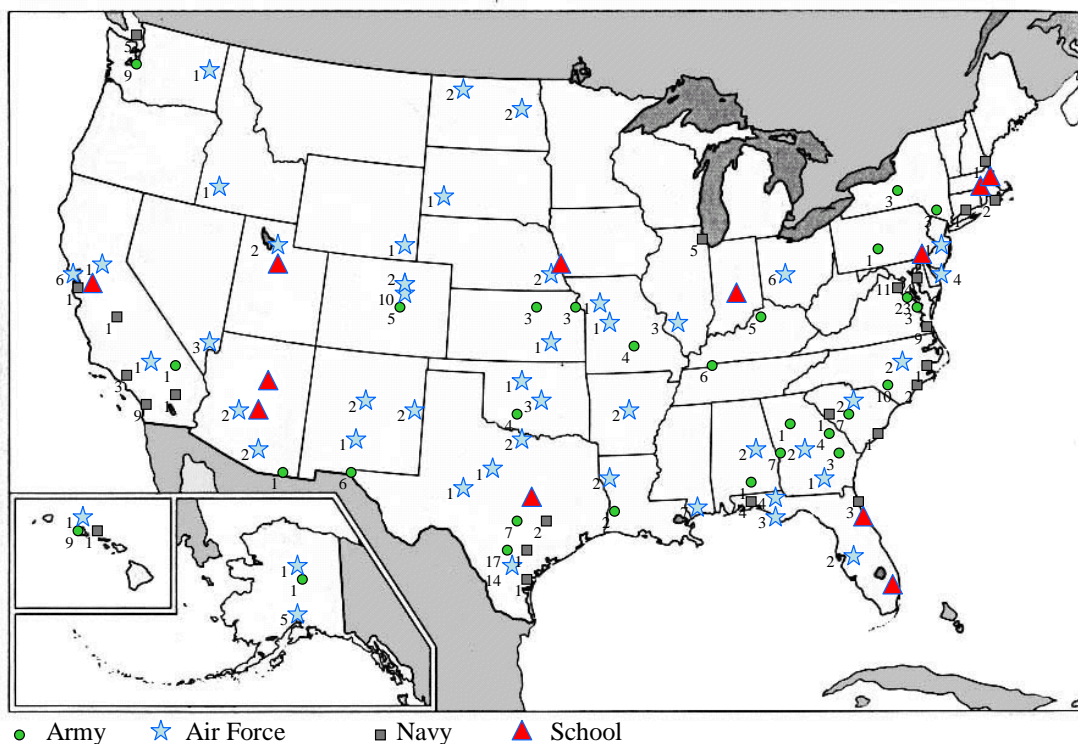


Figure 1. Geographical plot of DoD physical therapists in the United States.

Worst case, best case, and most likely case scenarios are presented in Table 7, Table 8, and Table 9 respectively. The Baylor University grandfathering option is the least expensive option under all three conditions while Boston University is the most expensive program under all three conditions. However, the Baylor University grandfathering option is not yet established and would only be available to recent graduates of the U.S. Army – Baylor University Graduate

Program in Physical Therapy. The Arizona School of Health is the second least expensive program under worst and most likely case scenario conditions. The MGH Institute of Health is the second least expensive program under best case scenario conditions. Finally, the cost to build a DoD tDPT program would require at least two years to develop the curriculum and become accredited and \$630,000 annually for personnel, facilities, and equipment.



Figure 2. Geographical plot of DoD physical therapists in foreign locations.

Table 7.

Worst case scenario

	PTET	GRE	Fees	Credits	Tuition	T & H	Internet	Total
Baylor University	\$0	\$115	\$202	3	\$2,238	\$0	\$160	\$2,715
Boston University	\$0	\$0	\$140	22	\$21,384	\$950	\$760	\$23,234
Temple University	\$700	\$0	\$691	27	\$17,631	\$0	\$800	\$19,822
MGH Institute of Health	\$0	\$115	\$1,300	15	\$10,005	\$0	\$1,250	\$12,670
University of St. Augustine	\$0	\$0	\$200	22	\$9,000	\$1,100	\$1,440	\$11,740
Rocky Mountain University	\$0	\$0	\$250	34	\$10,710	\$2,640	\$320	\$13,920
University of Miami	\$0	\$115	\$50	33	\$16,500	\$0	\$1,440	\$18,105
Arizona School of Health	\$700	\$0	\$100	62	\$6,570	\$0	\$720	\$8,090

Table 8.

Best case scenario

	PTET	GRE	Fees	Credits	Tuition	T & H	Internet	Total
Baylor University	\$0	\$0	\$40	3	\$2,238	\$0	\$60	\$2,338
Boston University	\$0	\$0	\$140	16	\$16,038	\$0	\$195	\$16,373
Temple University	\$0	\$0	\$251	12	\$5,364	\$0	\$120	\$5,735
MGH Institute of Health	\$0	\$0	\$1,100	8	\$5,336	\$0	\$180	\$6,616
University of St. Augustine	\$0	\$0	\$75	22	\$8,000	\$0	\$360	\$8,435
Rocky Mountain University	\$0	\$0	\$250	22	\$8,000	\$0	\$120	\$8,370
University of Miami	\$0	\$0	\$50	22	\$9,174	\$0	\$360	\$9,584
Arizona School of Health	\$400	\$0	\$100	10	\$6,570	\$0	\$120	\$7,190

Table 9.

Most likely case scenario

	PTET	GRE	Fees	Credits	Tuition	T & H	Internet	Total
Baylor University	\$0	\$0	\$202	3	\$2,238	\$0	\$160	\$2,600
Boston University	\$0	\$0	\$140	20	\$21,384	\$800	\$640	\$22,964
Temple University	\$0	\$0	\$331	15	\$9,795	\$0	\$480	\$10,606
MGH Institute of Health	\$0	\$115	\$1,100	10	\$6,670	\$0	\$490	\$8,375
University of St. Augustine	\$0	\$0	\$75	22	\$8,000	\$0	\$840	\$8,915
Rocky Mountain University	\$0	\$0	\$250	22	\$8,500	\$0	\$280	\$9,030
University of Miami	\$0	\$115	\$50	22	\$11,000	\$0	\$840	\$12,005
Arizona School of Health	\$400	\$0	\$100	20	\$6,570	\$0	\$420	\$7,490

Discussion

Two hundred and two of 416 DoD physical therapist responded to the needs assessment tool yielding a response rate of 49%. This very closely approximates the projected response rate of 50% and is sufficient to begin describing the DoD physical therapist population. Such data is essential in any effort to determine the basic needs of the three services as they relate to the APTA vision statement and the tDPT. It will also form the basis for planning, coordinating, and

ensuring the best value for the DoD and its physical therapists as they strive to maintain a sustained competitive advantage.

Compared to a sample of APTA members surveyed on motivational factors and barriers to pursuing tDPT degrees by Shelene (2003), DoD physical therapists differ in several ways. The gender of DoD respondents was 62% male, which differs from Shelene's sample that was only 29% male. The distribution of the highest physical therapy degree attained also differs since less than 1% of DoD respondents practice under Bachelor's degrees while 46% of Shelene's respondents practiced under Bachelor's degrees. This reflects the DoD's leadership and early transitioning to the MPT degree requirements. The DoD also appears to have a higher proportion of physical therapists with terminal degrees as well. Twelve percent of DoD respondents had terminal degrees compared to only 5% of Shelene's respondents. Descriptive statistics for age, years of experience, and type of facility were generally similar.

The demographic data and the comparison to Shelene's research of APTA members highlights two important factors that should be taken into account. First, the overwhelming majority of MPT prepared DoD physical therapists makes transitioning of BPT physical therapists unnecessary. With this in mind, even the worst case analysis does not consider physical therapists prepared at the BPT level. Cost for the tDPT would be higher for physical therapists practicing under a BPT because of increased assessment needs, required credit hours, and time to complete the curriculum. Second, while most DoD and APTA physical therapists practice in fixed facilities, 11% of the DoD's also practice in remote locations, deployable units, onboard ships, or overseas. Furthermore, most DoD therapists move every three years. Therefore, portability of the tDPT curriculum is essential to meeting the needs of many DoD therapists.

Data from the needs assessment tool also described DoD physical therapist's expectations and opinions of the tDPT degree. Forty-seven percent of respondents were strong proponents of the APTA vision statement, 35% were proponents, 5% were against, and 1% was strongly against. The overwhelming support for the APTA's vision can only facilitate a change in the DoD's culture and ease the transition. Sixty nine percent of respondents believed that the tDPT will improve the profession. This is consistent with studies by Ford (1990) and Stark (1986) into professional commitment and lifelong learning. Most respondents (57%) believed that the tDPT will improve direct access as previously reported by Shelene. In fact, many DoD physical therapists already enjoy the benefits and prestige of direct access and are often ardent supporters at state and national venues. Direct access privileges are used by tDPT programs for awarding advanced credit based on experience. Responses to the needs assessment tool in regards to pay were similar to studies by Shelene and Detweiler (1999). Even though 57% felt that it would enhance their employment opportunities, only 28% felt that it would enhance their pay. However, the downstream effects of large numbers of physical therapists prepared at the DPT level may increase the importance of possessing a terminal degree as discriminator at both retention and promotion boards. For example, half of the LTC candidates for the 2004 Army promotion board have terminal degrees. Pursuit of the tDPT may increase exponentially if it becomes linked to pay through promotion.

As is sometimes the case with change, introduction of the tDPT to the myriad of other physical therapy degrees is likely to confuse patients. Even though 53% of respondents stated that the tDPT would add value to patients, 41% stated that it would confuse or confuse and add value to patients. Further research is needed to determine patient understanding and preference of the preparation of their physical therapy providers. However, the next generation of Tricare

contracts rewards facilities for keeping beneficiaries within the system, and having providers with advanced credentials in this high volume profession represents a marketing opportunity that has the potential to save millions of dollars in recaptured workload.

With 5% of DoD physical therapists currently enrolled in a tDPT program and another 64% considering tDPT programs there is sufficient support to begin exploring potential tDPT courses of action for DoD physical therapists. In fact, 92% of respondents requested to be kept informed of developments associated with this project. Shelene found that time commitments and associated costs were the largest barriers to the tDPT and these were also the largest factors cited among DoD physical therapists. Only 42% said that they were willing to fund their program, but the average of \$7,398 approximates the cost of several programs under the most likely scenario.

Three options were analyzed for transitioning the DoD's Master level physical therapists to Doctorate level physical therapists in accordance with the APTA's vision statement. The first option involves requiring minimal additional course work by recent graduates of the U.S. Army - Baylor University Graduate Program in Physical Therapy. The second option involves assessing several existing tDPT programs to determine which is the most beneficial for DoD physical therapists. The third option involves building a DoD tDPT program.

The first option represents an opportunity for a small number of prior U.S. Army – Baylor University graduates to transition to the Doctorate level with a minimum of coordination and expense. In fact, there is precedence for such a transition. In 2001, prior graduates of the Army Orthopedic Manual Physical Therapy Residency and the Army Sports Medicine Residency completed an additional three semester hours titled Special Problems in Biomedical Studies

through Baylor University were grandfathered when these programs became accredited as Doctors of Science in Physical Therapy programs.

Former Directors of the U.S. Army – Baylor University Graduate Program in Physical Therapy differ as to which prior classes would be eligible for such a grandfathering tDPT option. The most recent director, initially recommended using the class that matriculated in 1999 as the earliest eligibility date. This date was used because it represents the point at which the U.S. Army – Baylor University Graduate Program in Physical Therapy changed its curriculum from the one shown in Appendix D to the one in Appendix E. The previous director of the program concurs with using 1999 as the cut-off point. He supports using a shorter cut point rather than a longer one because the curriculum in Appendix C did not emphasize evidence based practice, professional responsibility, and pharmacology. The curriculum in Appendix C also did not include advanced differential diagnosis. However, the director of the program in the late 1990s, has pointed out that it is not uncommon for programs to require fewer credits by their former graduates than other applicants based on curriculum variation between the MPT and DPT. Unfortunately, if the grandfathering option included all of the changes from Appendix C to Appendix E, it would require at least 12 credits and would not likely be any cheaper than other programs. Nor would it meet the intent of transitioning graduates of the curriculum in Appendix D to the curriculum in Appendix E, which differs primarily in clinical instruction.

Since students matriculated into the program in 1999 or later have what amounts to the same academic preparation between the MPT and DPT, one instructor from the AMEDD Center and School has proposed creating a three credit course designed to integrate the student's academic preparation with additional clinical requirements. This would be accomplished through the preparation of minimum data sets (MDS). MDSs have been used as the backbone for

effectively implementing all the components of clinical governance, including clinical risk and clinical audit, by laying the foundation for an accurate evidence base which can be used to compare clinical practices (ASA, 2003). The MDS proposal is appealing because it would be completed by students in a clinical setting and it has the potential to enhance the scientific literature and practice of physical therapy. Appendix F contains an example of a MDS for low back pain.

This option has already been discussed with the Dean of the Graduate School at Baylor University and it was well received. If the 1999 date is used as the cut off, the number of eligible students would be manageable utilizing existing DoD assets. Although this option would only be available to a small number of DoD physical therapists, it represents the least expensive opportunity to obtain a tDPT and takes maximum advantage of existing relationships and accreditations.

The second option seeks to take advantage of the DoD's group buying power, therapist experiences, and institutional privileges. The University of St. Augustine, the University of Miami, and Rocky Mountain University expressed interest in bulk or tier pricing. However, each university's ability to negotiate prices depends on its accrediting body, its bond rating issues, and whether it is a private or public institution. Since the needs assessment tool did not provide an absolute number of physical therapists interested in the different universities analyzed, price negotiations and the cost estimates are in the earliest stages and subject to change.

Each scenario assessed the cost of the Physical Therapy Evaluation Tool (PTET), Graduate Record Examination, fees, number of credits, tuition, travel and housing, and Internet. The PTET is only required by the Arizona School of Health. It costs \$400 for APTA members and \$700 for non-members. However, the cost is offset by decrease tuition cost based on PTET results. The

GRE, costing \$115, is not required by most universities and the education office of the services often pays for one exam if it is required. Additionally, GRE scores are good for five years, which covers recent graduates of the U.S. Army – Baylor University Graduate Program in Physical Therapy. Fees vary widely between programs and include application, graduation, technology, student, and software. The MGH Institute of health has the highest fees particularly if the student takes several years to complete the course of study. The number of credits also varies widely. They are lower if the tDPT applicant is a graduate of the schools MPT program and if the school favorably assess the professional portfolio. The professional portfolio is used by every school other than the Arizona School of Health. Its importance in overall costs cannot be overstated. Tuition varies in some cases by state residence and bulk pricing, but is most sensitive to the number or credits required to complete the tDPT. Travel and housing were calculated for Boston University which requires two days on location during one course, the University of St. Augustine which offers on location seminars as well as distance only, and Rocky Mountain University which requires two one week on location sessions. Both the University of St. Augustine and Rocky Mountain University are willing to schedule on location sessions at centrally located DoD facilities such as those in San Antonio, TX, and Washington D.C. Finally, Internet costs depend on the type of connection and number of months to complete the program.

Selecting a program from the most likely scenario with an emphasis strictly on cost shows that the Arizona School of Health is the least expensive alternative. However, it also has a renowned full time faculty and is eager to accommodate the needs of DoD physical therapists. It is followed by the MGH Institute of Health and Rocky Mountain University. Rocky Mountain University is exceptionally eager to serve the needs of DoD physical therapists and its staff consists of several instructors who are retired from the military and familiar with the demands of

military service. While the University of Miami is relatively expensive its program was rated third in the nation by *U.S News and World Report*.

The annual estimated cost of \$630,000 associated with the third option of building a DoD tDPT program makes it immediately nonviable. Such an option would require substantial human resources with the highest academic qualifications. Although the Army has one officer finishing his PhD in Distance Education Technology, such resources are scarce and would be difficult to obtain. Further complicating this option is the massive requirement for infrastructure. The need to develop assessment criteria, order of merit lists, course work, accreditation, and professional affiliations would require at least two years. Once the program was operational, students would likely still have to pay for affiliated university credits, resulting in no cost savings to students or the DoD. Finally, the program would be discontinued upon transitioning the DoD's physical therapists.

This study could be strengthened in several ways. First, Microsoft Word was used to create the needs assessment tool. It did not have a mechanism to ensure that all items were completed or that several items were not accidentally checked. It also did not ensure that responses to one question precluded responses to other questions. Future work on the tDPT project must seek to identify and coordinate DoD physical therapists interested in obtaining tDPT degrees to ensure that cost efficiencies are achieved. At this time, there are no personnel projected to continue tDPT efforts.

Conclusions and Recommendations

At the current attrition/retirement rate of MPT providers and the production rate of DPT and DScPT providers within the DoD, it will not meet the APTA's vision of becoming Doctoral profession by 2020 and is at risk of losing its competitive advantage within the profession. The

findings of this study suggest that there is widespread interest in tDPT degrees within the DoD physical therapy population. The potential to quickly and inexpensively transition 1999 and later graduates of the U.S. Army – Baylor University Graduate Program in Physical Therapy through a Baylor University grandfathering program exists for a small number of DoD physical therapists. However, most will have to have their academic and employment experiences assessed and enroll in existing tDPT programs. Fortunately, several existing academic programs meet the needs of the DoD population. This study projected the costs of seven tDPT programs under varying conditions. It is the first coordinated effort to begin efficiently transitioning the DoD's physical therapist to doctoral degrees.

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Appendix A. Needs Assessment Tool

This needs assessment tool will ask you several questions about yourself and your opinions of tDPT programs. Completion of this tool is voluntary and any information you provide will remain confidential. The needs assessment tool requires about five minutes to complete. Once completed, please save your survey and E-mail it to john.stang@amedd.army.mil as an attachment or you may mail it to John Stang, 8403 Berry Knoll Drive, Universal City, TX 78148. The automatic link may not work with older versions of Microsoft Office.

- 1) What is your gender? Please check one. Female ☐, Male ☐.
- 2) What is your age in years? .
- 3) What is your current pay grade? Please check one. O6 ☐, O5 ☐, O4 ☐, O3 ☐, O2 ☐, O1 ☐.
- 4) How many years of federal commissioned service have you completed? .
- 5) If you are a U.S. Army – Baylor University Graduate Program in Physical Therapy graduate, in what year did you graduate? .
- 6) What is your branch of service: Please check one: Army ☐, Air Force ☐, Navy ☐, Marine ☐, PHS ☐.
- 7) In what type of facility do you currently practice? Please check all that apply. Large fixed facility ☐, small fixed facility ☐, deployable unit ☐, onboard a ship ☐, on a reservation ☐, administrative fixed facility ☐, educational facility ☐, other facility-please describe .
- 8) What is your entry level of physical therapy education? Please check one. Bachelors ☐, Masters ☐, Doctor ☐.
- 9) What is your highest level of post-professional education? Please check one. Masters ☐, Doctor ☐. Please list specific degree (MS, PhD, DSc...etc) .
- 10) Do you have any specialty certifications? Please check one. Yes ☐, No ☐. If yes, please list .
- 11) What is your opinion of the American Physical Therapy Association's vision that by 2020 physical therapy will be provided by physical therapists who are doctors of physical therapy and who may be board-certified specialists? Please check one. Strong proponent ☐, proponent ☐, neutral ☐, against ☐, strongly against ☐.
- 12) Do you believe that tDPT programs will improve the profession of physical therapy? Please check one. Yes ☐, No ☐, Don't know ☐.
- 13) Do you believe that moving to a DPT will give physical therapists direct access parity with other specialty providers such as dentists and podiatrists? Please check one. Yes ☐, No ☐, Don't know ☐.

- 14) Do you believe that obtaining a tDPT will enhance your employment opportunities? Please check one. Yes ☐, No ☐, Don't know ☐.
- 15) Do you believe that obtaining a tDPT will enhance your pay? Please check one. Yes ☐, No ☐, Don't know ☐.
- 16) Do you believe that the tDPT will: Please check one. Add value to our patients (meaning improved care, improved access, or lower out of pocket expenses) ☐, Confuse our patients (because of the multitude of physical therapy degrees) ☐, Both ☐, Neither ☐.
- 17) What Information technology resources are available to you? Check all that apply. E-mail ☐, Internet ☐, Video teleconference ☐, Video teletraining (real time digital classroom) ☐.
- 18) Have you considered or are you presently considering enrolling in a tDPT program? Please check one. Yes ☐, No ☐. If no, please skip to question 22. If yes, have you already enrolled? Yes ☐, program _____, No ☐.
- 19) If you are considering enrolling in a tDPT program, are you willing to fund your own expenses for a tDPT program? Please check one. Yes ☐, No ☐. If yes, how much are you willing to pay? _____.
- 20) What factors would influence your decision regarding selection of a tDPT program? Please check all that apply. Price ☐, Time ☐, Location ☐, School reputation ☐, Other ☐.
- 21) Is there a tDPT program you would prefer to attend? If yes, please provide its name. Yes ☐, No ☐. Name _____.
- 22) If you would like to be contacted about future developments regarding a DoD tDPT program, please provide your name, address, E-mail address, and phone number.

Name _____

Street _____

City, State Zip Code _____

E-mail _____

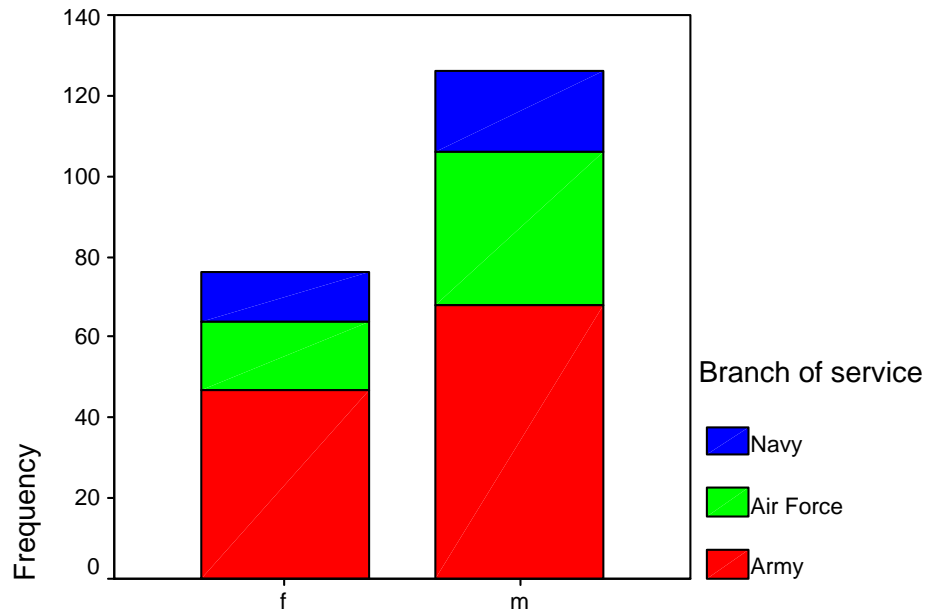
Phone number _____

- 23) Please provide any other comments you have regarding this needs assessment or tDPT programs. _____.

Thank you for your time and effort.

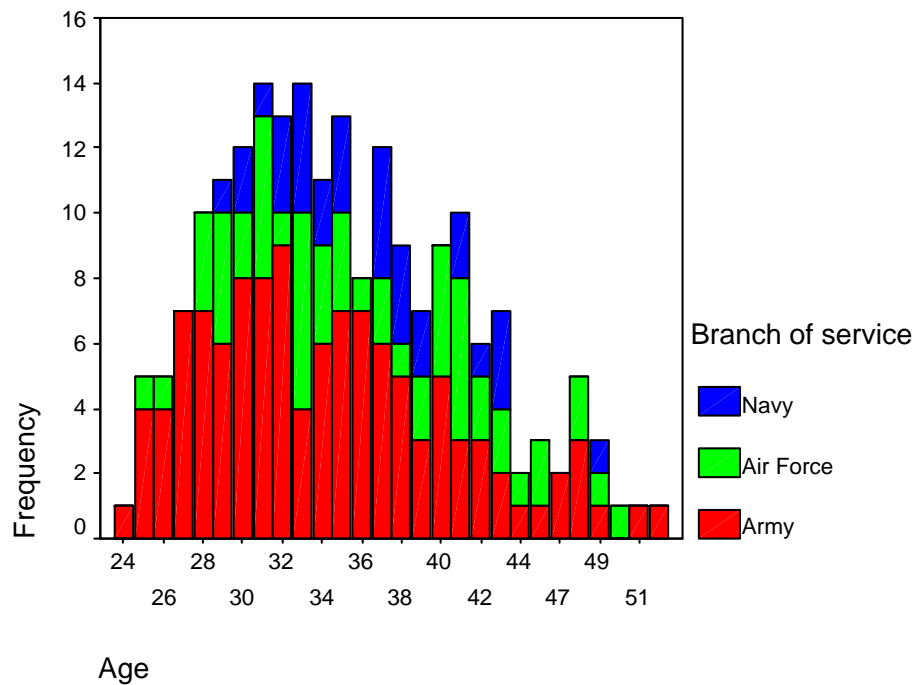
Appendix B. Demographic Graphs

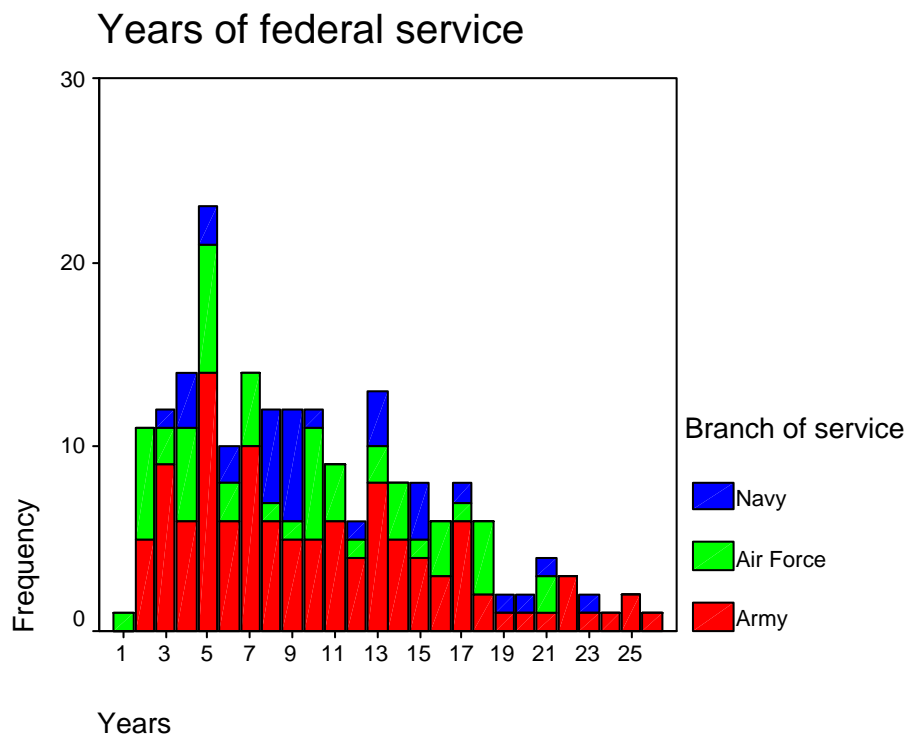
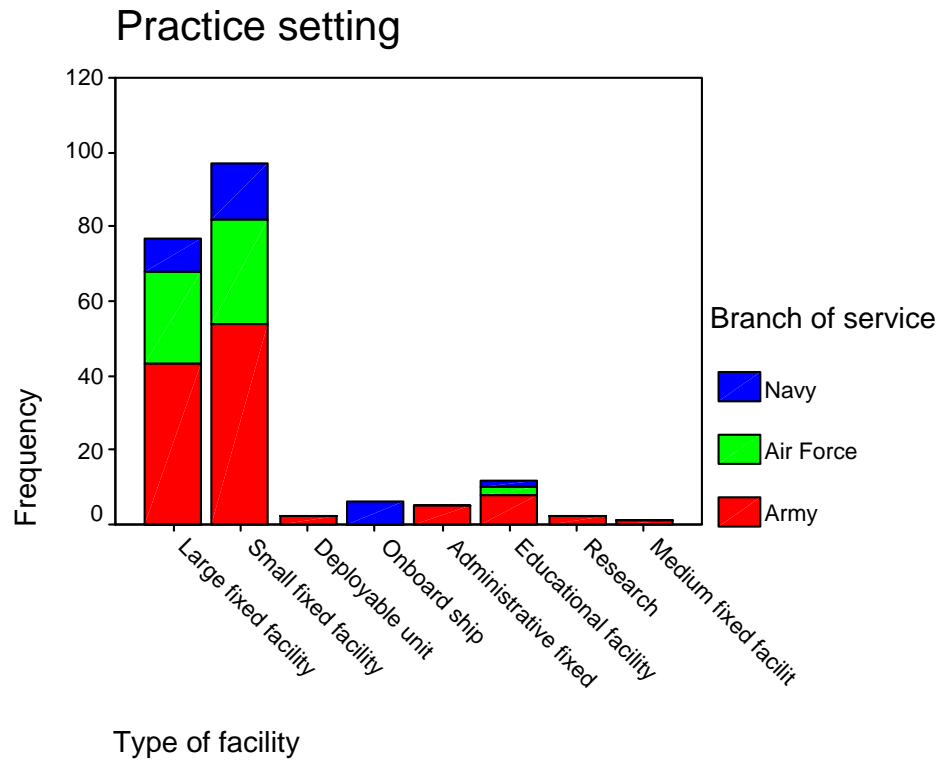
Gender distribution



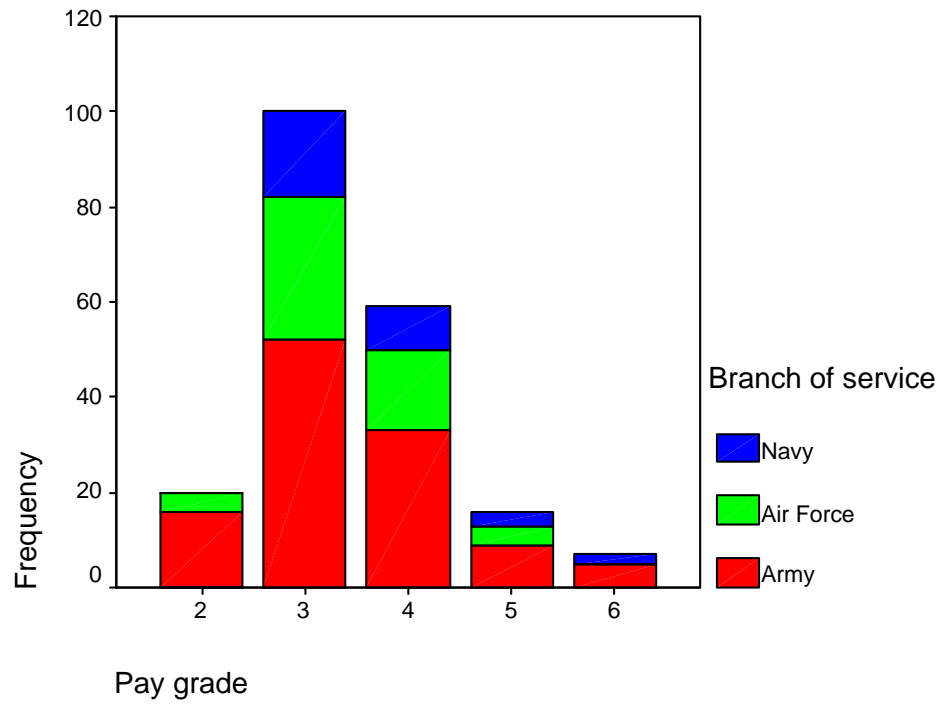
M=male, F=female

Age distribution

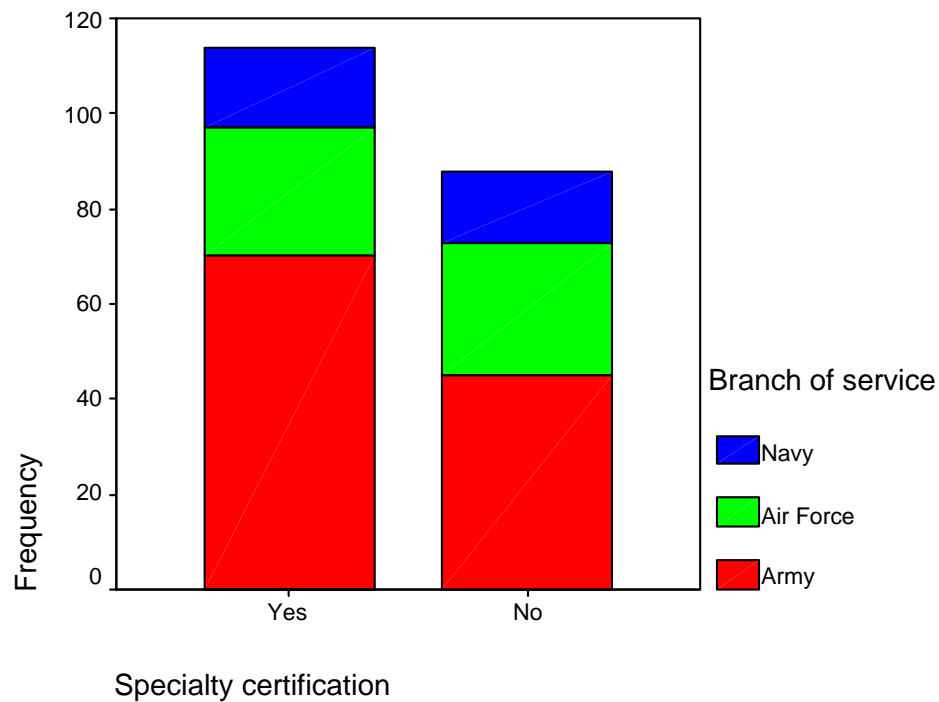




Pay grade distribution

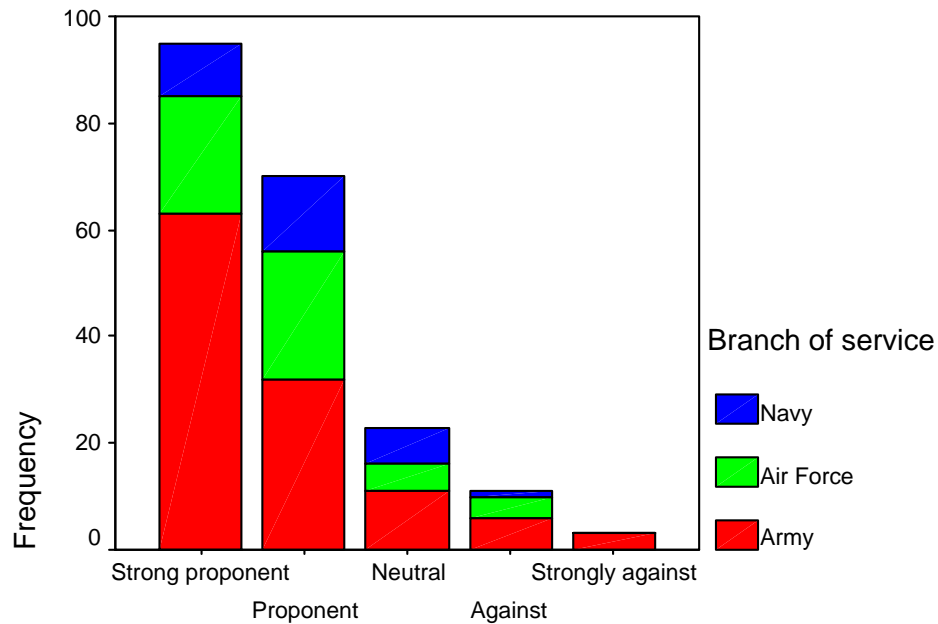


Specialty certification distribution



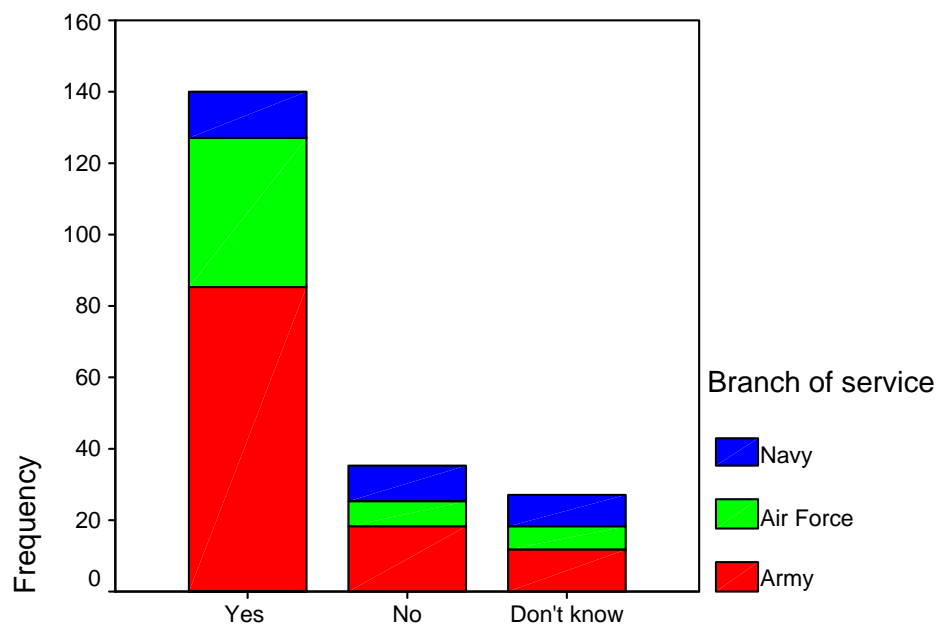
Appendix C. Opinion Graphs

Opinion of APTA vision statement



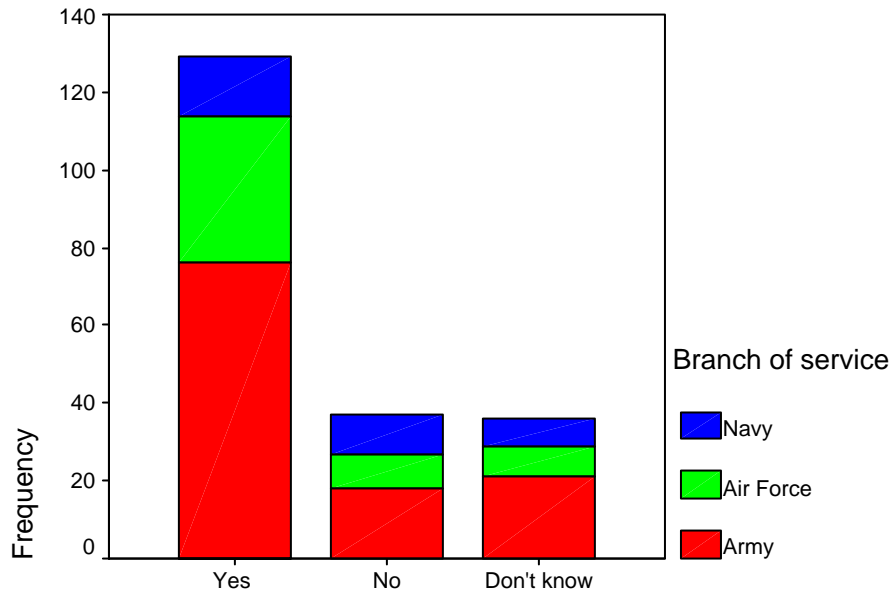
Opinion

Effect of tDPT on the profession



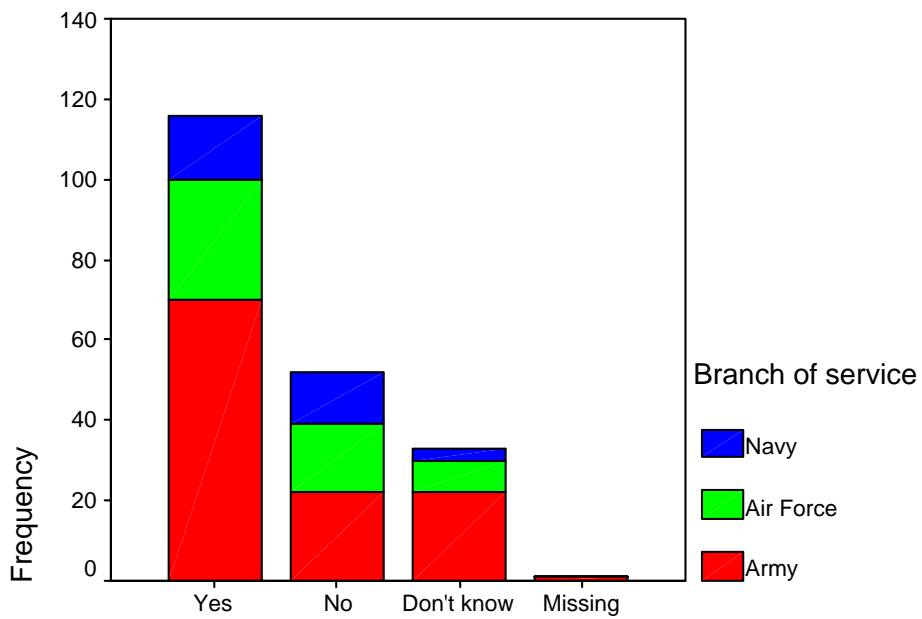
Improve profession

Effect of tDPT on parity



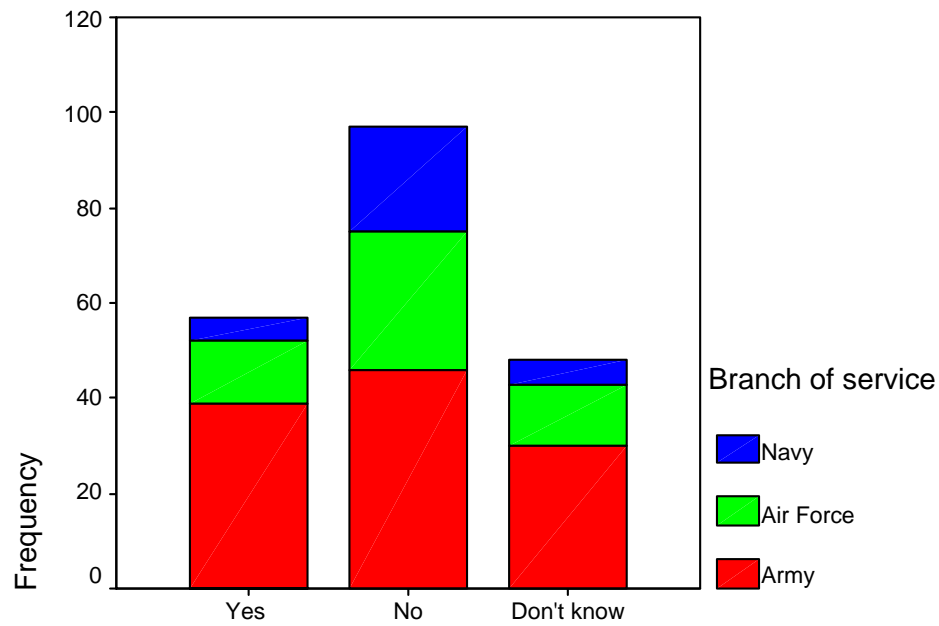
Improve parity

Effect of tDPT on employment



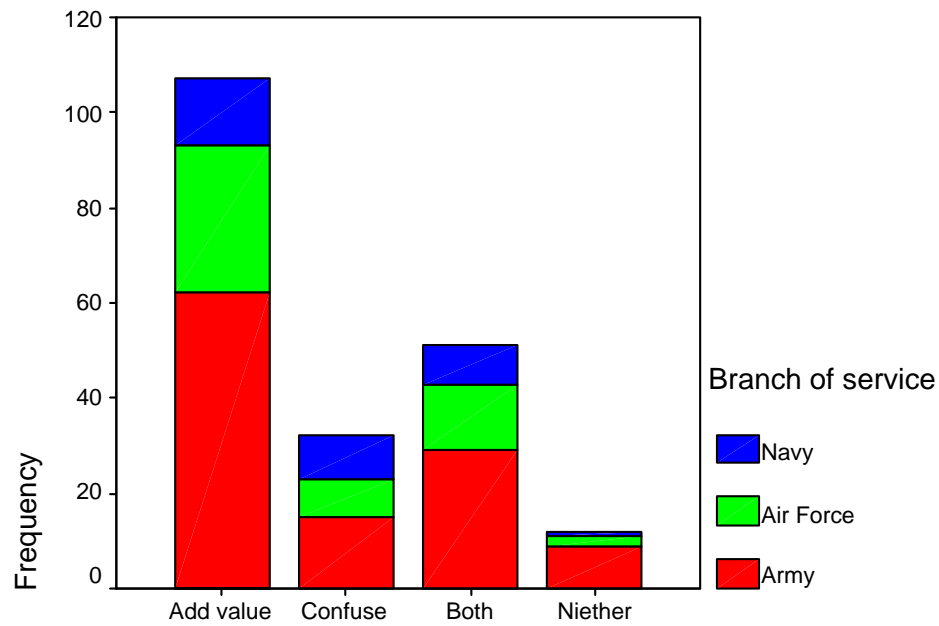
Improve employment

Effect of tDPT on Pay



Improve pay

Effect of tDPT on patients



Effect

Appendix C. Early 1990s MPT Curriculum

Course Number	Course Title	Credits
Semester 1		
PT 4212	Biomechanics and Kinesiology I	2
PT 4220	Clinical Medicine I	2
PT 4310	Anatomy I	3
PT 4311	Physiology I	3
PT 4440	Physical Dysfunction I	4
PT 4051	Seminar in Physical Therapy	0
PT 4060	Clinical Observation and Orientation	0
PT 5081	Instructional Development	0
	Semester Total	14
Semester 2		
PT 5212	Biomechanics and Kinesiology II	2
PT 5370	Research Methods I	3
PT 5220	Clinical Medicine II	2
PT 5312	Physiology II	3
PT 5430	Physical Dysfunction II	4
PT 5310	Anatomy II	3
PT 5760	Clinical Experience I	0
	Semester Total	17
Semester 3		
PT 5431	Physical Dysfunction III	4
PT 5351	Seminar in Physical Therapy	3

PT 5280	Admin Theory and Practice	2
PT 5211	Lifespan Physical Therapy	2
PT 5420	Neuroscience	4
PT 5121	Neurology	1
	Semester Total	14
Semester 4		
PT 5561	Clinical Experience II	5
PT 5562	Clinical Experience III	5
PT 5563	Clinical Experience IV	5
PT 5371	Research Methods II	3
	Semester Total	18
	MPT Program Credit Total	63

Appendix D. Late 1990s MPT Curriculum

Course Number	Course Title	Credits
Semester 1		
PT 4214	Clinical Pathophysiology	2
PT 4220	Clinical Medicine I	2
PT 4310	Anatomy I	3
PT 4311	Physiology I	3
PT 4501	Lower Member	5
PT 5213	Physical Therapy Fundamentals	2
PT 5370	Research Methods I	3
	Semester Total	20
Semester 2		
PT 4200	Physical Agents	2
PT 5125	Pharmacology for Physical Therapists	1
PT 5220	Clinical Medicine II	2
PT 5312	Physiology II	3
PT 5313	Spine	3
PT 5410	Anatomy II	4
PT 5411	Upper Member	4
PT 5760	Clinical Experience I	7
	Semester Total	26
Semester 3		
PT 5070	Professional Subjects Seminar	0
PT 5120	Neuroanatomy	1

PT 5122	Physical Rehabilitation	1
PT 5211	Lifespan Physical Therapy	2
PT 5230	Clinical Medicine II	2
PT 5280	Administrative Theory & Practice	2
PT 5320	Neuroscience	3
PT 5371	Research Methods II	3
PT 5431	Neurorehabilitation	4
	Semester Total	18
Semester 4		
PT 5761	Clinical Experience II	7
PT 5762	Clinical Experience III	7
	Semester Total	14
	MPT Program Credit Total	78

Appendix E. Current DPT Curriculum

Course Number	Course Title	Credits
Semester 1		
PT 6400	Physical Therapy Fundamentals	4
PT 6501	Musculoskeletal Physical Therapy I- Lower Member	5
PT 6310	Anatomy I	3
PT 6120	Evidence Based Practice I	1
PT 6330	Neuromuscular Physiology	3
PT 6231	Clinical Pathophysiology	2
PT 6240	Clinical Medicine I	2
PT 6150	Introduction to Therapeutic Intervention	1
PT 6470	Research Methods I	4
	Semester Total	25
Research/ Data Collection Week		
Semester 2		
PT 6402	Musculoskeletal Physical Therapy II- Spine	4
PT 6403	Musculoskeletal Physical Therapy III- Upper Member	4
PT 6104	Diagnostic Imaging & Procedures	1
PT 6411	Anatomy II	4
PT 6121	Evidence Based Practice II	1

PT 6332	Physiology of the Oxygen Delivery System	3
PT 6241	Clinical Medicine II	2
PT 6151	Pharmacology for Physical Therapists	1
PT 6252	Physical Agent Interventions	2
PT 6153	Orthotic and Prosthetic Interventions	1
	Semester Total	23
First 8-week clinical affiliation		
Semester 3		
PT 6405	Neuromuscular Physical Therapy	4
PT 6206	Cardiopulmonary Physical Therapy	2
PT 6107	Emerging Topics in Physical Therapy	1
PT 6112	Neuroanatomy	2
PT 6313	Neuroscience	3
PT 6122	Evidence Based Practice III	1
PT 6142	Clinical Medicine III	1
PT 6760	Physical Therapy Practice I	7
	Semester Total	21
Second 8-week clinical affiliation		
Semester 4		
PT 6208	Lifespan Physical Therapy	2
PT 6209	Primary Care Musculoskeletal Physical Therapy	2
PT 6123	Evidence Based Practice IV	1
PT 6254	Advanced Joint Manipulative Interventions	2

PT 6761	Physical Therapy Practice II	7
PT 6371	Research Methods II	3
PT 6280	Executive Skills for Physical Therapists	2
PT 6181	Physical Therapy in Deployed Environments	1
PT 6182	Injury Control and Prevention	1
	Semester Total	21
Travel time/ PCS to internship		
Semester 5		
PT 6V98	Physical Therapy Internship	30
	Semester Total	30
	DPT Program Credit Total	120

Appendix F. Example of Low Back Pain Minimum Data Set

LOW BACK PAIN DATA COLLECTION FORMToday's Date: / /

Therapist Name _____

Demographic InformationSex: Male ☐ Female ☐ Age: Date of Onset: / / Prior History of Back Pain: ☐ yes ☐ no

Diagnosis: _____

Symptoms (check one):

☐ Low back symptoms only☐ Low back and buttock/thigh symptoms (not distal to the knee)☐ Low back and leg symptoms distal to the knee

	Intervention	Pain		Flexion	
	Period	Score	SLR	ROM	Oswestry
Eval	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1 Wk.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2 Wk	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
D/C	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Intervention:

A. Mobility Exercises

B. Stability Exercises

C. General Conditioning

D. Mobilization

E. Manipulation

F. Soft tissue

G. Modalities

H. Manual Traction

I. Traction - Autotractive

J. Other: _____

Total number of visits: Total days of symptoms this episode X-rays ☐

Demographic Data

Dates: For all dates, use the format MM / DD / YYYY with a "0" in the first box if the month or day is a single digit. For the "date of symptom onset," if the patient cannot recall an exact or approximate onset, use the first day of the month when the symptoms began. If the patient cannot recall the month, use 01 / 01 / YYYY.

Prior History of LBP: Note whether or not the patient has had previous episodes of low back and/or leg pain that caused limitations in the patient's function.

Sex: Shade in the appropriate circle.

Symptoms: Check the circle that best describes the patient's symptoms.

Clinical Data

The data is set up to record for the initial evaluation, 1 week, 2 week, and discharge periods. Each row of data represents a given period. If the patient is seen twice or three times in one week, use the latest visit in the data for that week. If the patient is not seen during a given week, leave that row empty and fill in all other available data. .

Treatments: For each week, choose from the list labeled A-K the four major treatments used during that week. When more than four of the treatments are used, list the four of highest priority according to the therapist's opinion of those treatments that have most influence on the patient's recovery. If a treatment is performed that does not meet any of the categories listed, use the 'other' category and indicate what the treatment was on the line provided.

Pain Score: Record the patient's rating of the worst pain over the past 24 hours using a 0-10 scale where 0 represents no pain and 10 represents the worst imaginable pain.

SLR: The patient is supine with both legs extended. The therapist places the inclinometer along the anterior tibia, just distal to the tibial tuberosity. Set the inclinometer to '0'. Passively lift the patient's leg to the maximal tolerable level of hip flexion while maintaining knee extension. The range of motion is recorded.

Flexion ROM: The patient is standing. The therapist positions the inclinometer over the spinous process of the T12 vertebra. The patient is instructed to bend forward as far as possible without flexing the knees. The amount of total flexion range of motion is recorded.

Oswestry: The Oswestry Low Back Pain Disability Scale is a measure of disability due to low back pain. The Oswestry contains 10 items. Each item is scored from 0-5 with higher numbers indicating greater levels of disability. If all items are completed, the total score is multiplied by two and expressed as a percentage. If some items are not completed by the patient, the total score is divided by the total points possible and expressed as a percentage.

Total number of visits: The total number of PT visits this patient had for this episode of care.

Total days of symptoms: The total number of days the patient experienced for this episode of LBP.

X-Rays: X-rays ordered for this episode 1= By PT; 2= By other provider; 3= No x-rays.